GEOGRAPHIC NEWS BULLETIN

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THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

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Photograph by E. W. Fox. © National Geographic Society.

HOW THE WEATHER CAN STILL THE THUNDEROUS ROAR OF NIAGARA AND CHECK ITS MIGHTY POWER (See Bulletin No. 1)

HOW TO OBTAIN THE BULLETIN

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China's Foreign Patches

TO UNDERSTAND fully the geography of China, as well as the many discussions about her foreign relations, it is necessary to know those parts of China which have fallen under alien rule.

Seven regions, once a part of China proper, have been ceded or leased to foreign governments. These regions, which have actually been transferred, either by lease or cession, are not to be confused with the so-called "spheres of influence," which are more or less indefinite and many of which are not recognized by the Chinese.

What once threatened to be a common practice of annexing parts of China began with the arrival of the first Europeans in the Far East. Those who blazed the trail around Africa, across the stormy Indian Ocean, and up the east coast of Asia to rich Cathay were the Portuguese. For half a century they came and went in their trading ships, but by 1577 they felt the need of a station to facilitate their commerce, and settled at Macao on the southern coast of China. A region of about four square miles was set aside for them, partly as a reward for assistance in breaking up piracy in the nearby waters, and has been claimed by Portugal ever since. Formal transfer of this tiny fragment of China was made by the Chinese Government in 1887, and since then it has been, without question, Portuguese territory.

Lull Before Annexation Storm

More than two and a half centuries passed after the founding of Macao before China was again called upon, in the name of commerce, to give away more of her territory. By that time all the commercial nations of Europe, and the United States as well, were engaged in the remunerative China trade. Friction arose in the early part of the nineteenth century between British traders and the Chinese, and after a war in which Great Britain was victorious, China, as a part of her indemnity, in 1842 gave Great Britain the island of Hongkong, a few miles from Macao. This island, with an area of 32 square miles and one of the best harbors in the world, was actually ceded and became a part of the British empire. In 1860 Great Britain leased three square miles of territory on the mainland opposite Hongkong and shortly afterward this, too, was ceded.

What may be called China's period of "intensive land losses" extended from 1895 to 1900, with five nations participating. At the conclusion of the Japanese-Chinese War in 1895, Japan not only obtained Korea, over which China claimed a protectorate, but also the large island of Formosa, with an area of nearly 14,000 square miles, off the central Chinese coast.

A New Lease Every Month

From that time on the political pot boiled furiously among the nations wishing to follow in Japan's footsteps, and at one time the world was informed of a new lease of Chinese territory nearly every month. Germany tried to lease Kiaochow Bay on the coast of Shantung in 1896, but China refused her offer. In November, 1897, Germany seized the bay, ostensibly because two German missionaries had been killed in Shantung. In December the Russian Asiatic fleet steamed into Port Arthur, 200 miles north of Kiaochow, and announcement was made that it would winter there. In March, 1898, Germany obtained a 99-year lease of approximately 100 square miles on the shores of the bay which she had seized; and the same month Russia obtained a 25-year lease to Port Arthur and a part of the Liaotung peninsula, with the right to extend the lease.

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Photograph by J. W. Beattie. © National Geographic Society.

NO, THIS IS NOT A DIVING BOARD

Nauru (See Bulletin No. 4) is an island entirely "on its own," not a part of any group. The Marshall Islands lie to the northeast and the Solomon Islands to the southwest. On the latter group Shrines like this are found. The natives fear ghosts. If a chief has been powerful in life it is believed his ghost will be powerful after his death. Hence a Shrine is made to contain relics—the skull of the chief or his cremated body—and gifts of food are placed on nearby stones. To pass behind a Shrine is taboo.

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Where Our Weather Comes From

THOUGH the United States has reversed its trade balance in material products since the beginning of the World War, and now sends out more articles and products than other countries send in, there is one "commodity" for which we must look beyond our borders, and probably always will. It is our weather—a necessity in our daily life, but one that perhaps we do not always appreciate.

A certain part of our weather, to be sure, might bear the brand, "made in the U. S. A.," but it is only a minor portion. For the most part our supply of rains, snows, blizzards, cold waves and hot waves, tornadoes and tempests, come tumbling in from the northwest and the west. A smaller percentage come from the north and the southwest, and a few storms from the Gulf of Mexico and the south Atlantic. But it is worth noting that practically none of our weather enters the country through the stretch of the Atlantic coast north of Cape Hatteras, the section into which pours the vast bulk of our material imports.

Alaska Has a Hand in Our Weather

Though the United States proper does not brew its own weather, there is some consolation to enthusiasts for the "made in America" movement in the fact that the great majority of the disturbances that enter the States originate in Alaska or in the great warm cauldron of the north Pacific between the Aleutian Islands and Hawaii, which is almost a United States sea.

Weather disturbances which enter the United States accompany "lows" and "highs"—separated areas of low and high atmospheric pressure as registered by the barometer—which drift in general from west to east. Atmospheric pressure is the result of the weight of the great sea of air compressing the lower portion. Naturally, in regions where the air is rarefied and is rising, the weight, and therefore the pressure, is relatively low; where the air is contracted and is sinking the weight is greater and the pressure is relatively high.

Heat is the chief factor in starting air to rise over a "low"; and once the start is made the movement is contributed to by various causes, notably condensation into cloud and rain that give out to the air the original heat of evaporation. Thus a sort of "chimney" for rising air is established, and at its bottom the pressure is reduced.

Most Rains Near "Lows"

The areas of disturbance—"lows" and "highs"—made familiar to large numbers of people by the rough circles and ellipses that indicate them on the daily weather maps of the United States Weather Bureau, cross the continent normally in three or four days. Usually rain or snow falls in the "low" areas or slightly in advance of them. The rains that occur in the arid parts of the West, however, usually follow the passage of "lows."

In winter the great factory for "lows" is the extensive body of warm water south of the Aleutian Islands and in the Gulf of Alaska. This region is kept warm by the Japan current. The air over the water is warmed and tends to rise. This reduces air pressure and maintains a permanent area of low pressure practically throughout the winter.

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Only a few weeks after the leases had been granted to Germany and Russia, Great Britain obtained a lease on the shores and Bay of Weihaiwei, almost equidistant from Port Arthur and Kiaochow. This British lease was not for a definite number of years but provided that it was to run for the period during which Russia should hold Port Arthur. Later in April France entered the competition and took a 99-year lease on the Bay of Kwangchow and approximately 230 square miles of territory on the mainland.

France Enters the Field

In June Great Britain increased her holdings at Hongkong by leasing for 99 years 356 square miles of additional territory on the mainland and additional islands aggregating 20 square miles in area. In November, 1899, France added to her lease at Kwangchow a group of islands dominating the bay. Finally in 1900 came one of the most ambitious steps of all in the acquisition of territory—the occupation of Manchuria by Russia. This brought on the Russo-Japanese war, after which both Russia and Japan removed their troops from Manchuria, which reverted to China, but with the provision that Japan should have certain economic concessions.

Since 1900 no new areas in China have passed under foreign control, but there have been important changes in the ownership of some of the seven tracts already alienated. After the Russo-Japanese War, Japan succeeded to Russia's claims on Port Arthur and the Liaotung peninsula, and obtained an extension of the lease to 99 years. As a result of the World War Japan came into possession of the German territory and concessions in Shantung.

With the removal of Russia and Germany from China, the seven tracts under alien control are now in the hands of only four nations. Japan holds three; Great Britain, two; and France and Portugal, one each. Japanese Formosa, British Hongkong, and Portuguese Macao are claimed as unqualified possessions. The other four regions are held under 99-year leases.

Photograph by Edwin Levick. © *National Geographic Society.*

MANHATTAN END OF BUSIEST BRIDGE IN WORLD'S LARGEST CITY (See Bulletin No. 3).

Brooklyn has a population of more than two millions, and during the rush hour it seems as if the whole borough wants to cross the Brooklyn Bridge at once. Yet every East River tube and other highway bridges are doing their best to relieve the crush at City Hall Square.

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Which Is the World's Largest City?

WHICH is the largest city in the world?

The question arose again with the British census announcement which ascribed to "Greater London" 7,476,168 people.

Since the 1920 census gave New York City a population of 5,620,048, there would seem to be no question regarding the relative size of the two cities. But if one seeks to know what is the largest population center in the world, then New York can advance a tenable claim against London for the honor.

Strictly speaking, the municipality of New York has more people than the municipality of London. For legally, as a municipal unit, "London" refers only to the area within the boundaries of the County of London. Thus the municipal London, which corresponds to the municipal New York, comprises about 116 square miles and, in 1911, had a population of four and a half millions. Only the "Greater London" figures are carried in dispatches, but at the rate of growth they indicate, London proper still is under the five million mark.

Extent of "Greater London"

The "Greater London" which has nearly seven and a half millions has an existence as a metropolitan and police unit. It is municipal London plus the so-called "Outer Ring." The 7,476,168 people of "Greater London" are distributed over 693 square miles, an area six times that of municipal London, and more than twice that of municipal New York.

In passing it should be noted that not only is there a distinction between "Greater London" and plain "London," but that the "City of London" is "something yet again." The "City of London" covers only 675 acres and has a resident population of fewer than 25,000. The day population, however, exceeds 300,000. The "City of London" is the London of history, with its quaint government forms, including its lord-mayor who is installed annually with a time-honored ceremony known as the lord-mayor's show.

New York of today is an agglomeration of towns. All have been amalgamated with the original New York, comprised in what now is the borough of Manhattan, or the county of New York. The New York which includes the boroughs of Manhattan, Brooklyn, Bronx, Queens, and Richmond, is a municipal unit with an area of 326 square miles and a population of 5,620,048.

An Imaginary "Greater New York"

The "Greater London" includes all the suburbs within a radius of 15 miles around Charing Cross. By this definition New York also should include Jersey City, Hoboken, and Bayonne, across the Hudson, and Yonkers, Mt. Vernon, and New Rochelle to the north.

Suppose New York were to add to its present area the aggregate 273 miles of Hudson, Essex, and Union counties in New Jersey, it still would be a hundred square miles smaller than "Greater London" but would pass the seven million mark in population. Were it then to add portions of Westchester County (north of the Bronx) and of Nassau County (on Long Island) it would pass London's population well within a like area.

Summing up, then, municipal New York is larger than municipal London.

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From time to time such a large area of low pressure is developed that "fragments" of the area, so to speak, "break off" and drift with the prevailing winds to the east. It is somewhat like a bubble of air under thin ice breaking off from a larger bubble and finding its way with the flow of the water to another location. Normally a new "low" is thrown off every few days.

Battle of "Highs" and "Lows"

The most common course of these "lows" is across the southern panhandle of Alaska and over British Columbia, to cross the Canadian border into the United States in Alberta. For convenience they are called "Alberta storms." A somewhat fewer number of disturbances, called "North Pacific storms," originating in the same general region, enter between Puget Sound and northern California.

South Pacific storms, entering south of the northern boundary of California, are still less frequent; for this is the region of a more or less permanent "high," the effect of which is to keep the drifting "lows" farther north. Now and then a "low" is formed in some section of the broad curving band of country stretching from Alberta through Texas, including the Rocky Mountains, or even in the central or Gulf States; but these occur much less frequently than the "lows" which drift in from the Aleutians.

In the summer the Aleutian region which produces "lows" is shifted to the interior of Alaska, and from there the succeeding disturbances drift southeastward, and those that enter the United States do so east of the Rocky Mountains. The characteristic path of all the "lows" which enter the United States in the northwestern portion of the country is a more or less deep dip to the south just east of the Rocky Mountains, and later a turn to the northeast. By far the greater number of them finally pass from the continent down the valley of the St. Lawrence river, not because this great valley influences their passage, but because they are attracted toward the permanent North Atlantic "low" in the neighborhood of Iceland. It is as though the bubble of air under the ice broke from its parent bubble, meandered about for a while, and finally merged with another large bubble.

The "highs" that traverse the United States have fewer places of origin than the "lows"—Alberta, North and South Pacific, Rocky Mountains, and Hudson Bay. They usually bring cooler weather with them. The bitterest cold waves known in the region from the Great Lakes eastward follow "highs" that drift down from Hudson Bay.

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A Chemical Coincidence

HERE is the cold geographical fact: "Almost contemporaneously with the issue of the mandate of administration from the Island of Nauru, famous for its rich deposits of phosphate of lime, was the rediscovery of the great sulphur mountain of Vanua Lava in the Banks group of the New Hebrides." (From a U. S. Government report.)

But here also is a fairy tale of science, a happy chemical coincidence, or a problem in relativity.

Scene one might disclose little American Polly Smith dropping pennies in a box to take to Sunday School to "give teacher to send missionaries to the heathen." Scene two might portray some waving grain fields of our fertile west, and a close-up show Farmer Blank buying fertilizer at the village store. And the fertilizer enriched the soil, which grew the grain, which sold for the money, which little Polly Smith put into the box to "give teacher to send missionaries to the heathen."

Here a second geographical fact must obtrude: "The special agent needed to change Nauru's phosphate rock to a soluble state for sale to farmers is Vanua Lava's sulphur."

At World's Jumping-off Place

The following information about the island of trees that grow on stilts where missionaries have gone, and where we may get fertilizer, is extracted from an article in the National Geographic Magazine by Rosamond Dodson Rhone:

Nauru, or Pleasant Island, is almost at the jumping-off place of the world; it is not exactly "East of the sun and west of the moon," but it is almost the farthest east, being only thirteen degrees west of the international date line, and it is a half degree south of the Equator. It is one of the Line islands.

Before it fell to Germany it knew no white rulers, but was governed by its own immemorial laws, enforced by its own chiefs; but white influence had impinged upon it for many years. Whaling ships from New England ports called there and traded firearms for drinking coconuts and island pigs. It was rather a poor island in those far-off days, before its great wealth was discovered. It had no sandalwood or tortoise shell, no pearls or beche-de-mer; not even copra, for copra was not made in the Pacific before 1872 and coconut oil was not an article of commerce.

Arose Dripping from the Sea

One day Nauru, like Aphrodite, arose dripping from the sea. The date of this emergence cannot be more nearly indicated than ages ago, and the term day is not limited to twenty-four hours, but is to be construed liberally, like the days of Genesis. The island may indeed have been thrust suddenly into the air, with all her lovely polyps gasping and shriveling in the tropic sun, and scarlet fishes and long armed octopi leaping affrighted out of the exposed caves to the safe shelter of the sea, while slow-moving sea urchins and mollusks perished in the pot-holes and labyrinths of the coral; or the process of elevation

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A mythical "Greater New York" extending as far into its environs as does "Greater London" would be larger than "Greater London." Aside from municipal definition New York and the territory about it constitute a greater population center than London.

Within fifty miles of City Hall, New York, there now live more than nine million people, and within a hundred mile radius lives one-ninth the entire population of the United States.

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Photograph by C. D. Jameson. © National Geographic Society.

A BOAT WITH WHICH THE CRAFTY CHINESE FISHERMAN MAKES THE FISH CATCH ITSELF

Attached to the long, narrow canoe is a thin board, painted white, one edge floating in the water. On calm, bright moonlight nights the canoe is swung out into the river across the line of an advancing school of fish. The man sits quietly waiting and the fish, dashing at the white board glistening in the moonlight, land in the canoe.

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Ravenna: Shrine of Dante and Reliquary of Rome

MANY a mean place marks the shrine of a great man; but in Ravenna great crowds have been honoring Dante in a city as nearly unique as the singular genius of that poet.

Ravenna's geographical position once rendered it an "impregnable City of the Sea" and preserved it as a "Pompeii of the Byzantine Era." Its recent interest was assocated with the 600th anniversary of the death of Dante, who is buried there; but its permanent significance lies in the fact that it was "the death bed of the Roman Empire and its tomb."

Ravenna is the Hamlet of Italian cities. To its isolation and solitude it owed the presence of the emperors of declining Rome, and the same quality has preserved the mystic spirit of the four centuries, the fifth to eighth, which it alone typifies.

How Geography Made Ravenna

Recall that the Apennines cut across the upper part of the Italian boot from Genoa to Rimini, just north of Ravenna. There the range turns south, short of the Adriatic. Ravenna therefore has a strategic position in relation to Cisalpine Gaul, the Italian peninsula and the Adriatic.

This position, in conjunction with its inaccessibility, made the little town of Gallia Cisalpina Cæsar's rendezvous to plot with Roman adherents while he campaigned in Gaul, into the mighty Ravenna, where Honorius first established an imperial residence, Odoacer set up a kingdom, and Theodoric the Ostrogoth finally established a Versailles of the medieval world.

Ravenna was inaccessible because it was laid out along canals among marshes. The tide was the sanitary agent. The principal complaints in this respect were against flies and frogs and an inadequate water supply. One writer reports, "We were thirsty in the midst of the waves." Martial wrote:

> That landlord at Ravenna is plainly but a cheat,
> I paid for wine and water, but he served wine to me neat.

The Brooklyn of Europe

Architecturally Ravenna is the Brooklyn of Europe. Its churches are unique because they exhibit the three-fold influence of Roman, Byzantine and Christian art. A dozen or more of these edifices are counted of high artistic and historical merit, and about them entire volumes have been written. No place affords such an opportunity as Ravenna to study the years just before and after the break-up of the Roman Empire.

Ravenna long had passed the zenith of her influence and power when Dante spent the last years of his life there. He was the invited guest of Guido Novello, lord of the city, whose patronage of art and letters kindled a flicker among the embers of the city's great past.

Byron's Description of Dante's Tomb

It is paradoxical that in a city noted chiefly for its architectural treasures the ashes of its most famous resident should repose in a shrine described by

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may have been gradual, life in the coral dying gradually at the emerged top, while it remained in full vigor just beneath the level of low tide.

At any rate, when the upheaval was complete, when the fairy towers and pinnacles and the unsunned caverns of the sea had been lifted into the blaze of the sun, life at its base beneath the sea continued unabated and the fringing reef was slowly extended around it.

Look Like Aquarium Houses

At this period the island must have looked like those fantastic artificial structures which we see in aquariums. No product of man's construction could be more extravagant in conception than these pinnacles, towers, bridges, flying buttresses, their shapes always suggesting architectural fantasies upreared into the air. There it stood, bare and bald as did the earth on that day in Genesis when the dry land first appeared.

Then came the sea-birds, millions and millions of them, feeding on the abundant sea-food, nesting in the coral, hatching their young in ever-increasing multitudes, and depositing the waste of their bodies in the coral till the lower crevices were filled and a gradually rising body of guano attained at length a level with the tops of the pinnacles, and then rose above them and lay in a level plateau across the island.

Ramparts Surround Island

On the margin the rains, the winds, and the breakers, spouting high against the coral, washed away this deposit, so that ramparts of bare pinnacles stood up and still stand all around the island; but the coral walls back from the shore held safe the treasure. Came another day (I am aware that I am flinging days about as casually as the author of Genesis). The sea-birds were gone; not a keen red eye or swift-driving wing was left; gone, immemorially gone. How or why is a mystery.

Then in the alembic of Nature a transformation occurred. Guano is chiefly phosphoric acid and nitrogen; coral is chiefly lime. Somehow, by the close contact, the guano became changed into phosphate of lime, which is guano raised to the *n*th power. It had now become a hard rock, odorless and generally colorless, although some specimens show fine, dark stratification, and take a high polish.

Another day—perhaps the same day (it is startling to see how closely this follows the Genesis story of creation)—vegetation appeared, narrowly limited in species, but abundant in specimens; and finally man, the brown people of the South Sea. This must have been the order, for where there is no vegetation there is no population.

The vegetation owed nothing to the wealth of phosphate beneath it. Phosphate is not soluble in water. It needs treatment with sulphuric acid, which converts it into superphosphate to let loose its treasure of stimulation for plants.

Byron as "a little cupola more neat than solemn." Byron, it will be recalled, lived at Ravenna in 1820-21 during the time of his friendship with the Countess Guiccioli.

The sea has receded from Ravenna, its lagoons now are marshes. Two streams which are not navigable and a canal connect it with the Adriatic. It is the capital of the modern province of Ravenna, in the department of Emilia, and lies 45 miles east of Bologna. It was among the first cities to cast its vote for Italian unity in 1859. Ten years earlier Garibaldi's wife, who accompanied her husband in his flight from Rome, died in the marshes outside the city.

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JAPANESE ENGAGE IN THE CAMPHOR INDUSTRY OF FORMOSA (See Bulletin No. 1)